THE JUNIOR HIGH SCHOOL CLEARING HOUSE

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Sioux City, Iowa

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The Junior High School Clearing House is to be published eight times between June 1, 1923, and May, 1924. The subscription price is $1.00 per year; the price of single copies is 15 cents. Orders for service of less than a half year will be charged at single copy rate. Patrons are requested to make all remittances payable to The Junior High School Clearing House.

[redacted]

Eight a year. Eight numbers in Vol. II. 30 [illegible]

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Published eight times per year. Subscription rates; $2.00 yearly for 8 numbers 30 cents a copy
All MSS. should be typed and addressed to The Junior High School Clearing House, Sioux City,Ia.

JUNIOR HIGH SCHOOL MATHEMATICS

Walter W. Hart
University of Wisconsin

A proper consideration of junior high school mathematics calls for a perspective view of the junior high school movement. All that is possible in a brief article is to recall that this movement started years ago in agitation for a six year high secondary school; that the movement, in its narrow but popular sense, proposes a new organization of grades seven to nine, inclusive, (in Northern States), (a), preferably as a separate school, or (b), possibly, as the lower half of a six year high school, —in both cases, however, housed and administered separately from the lower grades; that, in a larger sense, the movement embraces all means of improving instruction for children in grades seven to nine inclusive, independent of, although including such particular means as new housing and administration.

The narrow interpretation of the movement serves as a brake on its progress, because it retards and even prevents affording the advantages of the movement in many communities, owing to the difficulty or impossibility of providing the new buildings and administrative machinery which are demanded in the narrowly conceived junior high school. This is unfortunate because these obstacles are, in fact, only the externals of a junior high school.

The broader interpretation of the movement is at once a blessing and a curse. By the leverage of the popularity of the movement, schools are able to make improvements in the curriculum and the instruction which would not be possible otherwise, in many cases, because of the inertia of educational tradition. On the other hand, and this is the "curse", this very opportunity is grasped most avidly by the opportunist, the faddist, the extremist, with the result that every strange idea of education has been offered as specially necessary and applicable in the junior high school. Nevertheless, it is this broader conception of the junior high school movement which should be dominant, because most of the valid aims of the movement are quite compatible with the present organization, administration and housing of grades seven to nine inclusive.

These aims, to summarize, are:

a. To overcome some of the problems of retardation and elimination in these grades;

b. To provide for the more adequate education of youth—whatever that may be;

c. To provide for more rapid education, and more flexible education for children in these grades.

The means proposed include:

a. Modifications of organization and administration,—of which departmental instruction under specially trained teachers, and promotions by subjects are most important, and these are possible in most schools;

b. Changes in curriculum, including

elimination of obsolete and too difficult material, emphasis upon material which has social or economic significance, and gradual introduction to secondary school subject matter,—all of which are possible in most schools;

c. Modifications of methods of instruction and modes of class management,—most important of all, and entirely possible in any school having adequately trained teachers.

These proposals in their general form are not at all new. In particular forms, they have been practiced in many schools for years. One of the principal functions of the junior high school movement is to universalize them. The application and the implications of these means in the subject mathematics will now be considered.

First of all, the aim of junior high school mathematics is to provide the best possible course in mathematics for grades seven to nine inclusive, *considered as an educational unit.* The new idea here is embodied in the phrase italicized. Instead of having three separate courses in mathematics in these grades, there should be one course functioning in the three grades. This is one definite means of "bridging the gap"; more important, this is the means of making a better course in mathematics.

In terms of subject matter, the aims of this course should be:

a. To review in each grade the essentials taught in preceding grades, doing so indirectly, when possible, but directly, if necessary; in particular, to review in grade nine (first year of "high school") the arithmetic taught previously, because arithmetic is the practical mathematics for most people. This aim calls for unusual perseverance and systematic instruction on the part of the teachers, and, in the case of ninth grade teachers, it may call for some persuasion "from above";

b. To teach in each grade the maximum of modern arithmetic for which the pupils are prepared,—including, in grade nine, any arithmetic which has been too difficult previously;

c. To teach some intuitive geometry, as defined and for the special purposes enumerated below,—beginning in the seventh grade;

d. To teach some literal arithmetic and the beginnings of algebra before grade nine, for reasons given below;

e. To complete by the end of grade nine a strong course in modern algebra.

In terms of mental habits and attitudes, the improvements sought are:

a. To provide a course in *unified* course which interests them, in the best sense of the concept "interest";

b. To provide a course in which rationalization is characteristic, in contrast to the courses in the lower grades in which habituation is the chief characteristic;

c. To provide a course which will, in general, develop desirable "habits of thought, achievement, and conduct." (Hanus)

In terms of organization, the improvements sought are:

a. To provide a course in *unified* general mathematics,—a course whose content is tied together naturally in some manner, a course which gives the learner a broad outlook over certain elementary parts of mathematics, without, at the same time, sacrificing the

qualities of consecutiveness, and system, which have been and should continue to be prime qualities of a course in mathematics;

b. To retain arithmetic as the main subject matter for grades seven and eight, and modern algebra as the chief content for grade nine;

c. To make each grade carry on the work of the grade below, and prepare for that of the grade above.

What precedes is only a syllabus of ideas for a course in junior high school mathematics, each item of which could and should be elaborated. In a brief article, only a few can be elaborated.

Observe in this syllabus the emphasis upon arithmetic. Skill in computation must be attained and retained by pupils. There is a grave danger at this point however. Many courses of study give what seems an unwise amount of time to practice exercises in abstract computation. By the time children reach grades seven and eight, such practice begins to reach the stage of diminishing returns, and most certainly begins to be a bore to the pupils. At the beginning of grade seven, there is argument for systematizing and rationalizing the pupils' knowledge of the fundamental processes, since that has not been done previously. As much as possible the necessary reviews of the fundamental processes should enter as by-products of other more worth-while subjects of study especially grade eight.

The maximum benefit from the study of arithmetic in these grades, however, must come from the informational arithmetic. First of all, the pupils need training in solving problems. In the lower grades, they get an abundance of training in the abstract processes, and, often, an inadequate amount of training in solving problems. While solving the typical problems in the junior high school, they are made acquainted with the uses of arithmetic in various situations of life. No other part of mathematics is so rich in contacts with social, industrial and business practices,—in fact, no other school subject is as rich in these respects as is informational arithmetic. This type of arithmetic should be stressed in grades seven and eight, and should be carried over into grade nine, instead of bringing down into grade nine any demonstrative geometry or even numerical trignometry. It is far more educative than either of these subjects for children of junior high school age. Some say that this arithmetic is "beyond the world of thought and interest" of the pupils. That is exactly the reason for teaching it, —namely to extend their world of thought and interest. It is time for the pupils to get away from the world of toys and dolls into the world of actuality in which we all live. To be sure, it must be the purpose of the junior high school course of mathematics to arrange this informational arithmetic in a graded course, and to teach it by methods which will enable the pupils to profit by the study of it, and which will bring out its mathematical value as well as its informational value.

There is reason, time, and place for instruction in geometry in the junior high school, intuitive geometry,—geometry studied by methods in which intuition and experiment, or induction

play the principal role. There is valuable geometrical information which children should acquire, but thinking educators in all countries, as well as the experience of the race, have agreed that demonstrative geometry is unsuited for the first instruction for children. Intuitive geometry fills this need. Over a generation ago an effort was made to introduce it into the schools. but with little success. The failure was caused in part by lack of clear understanding of the purpose of the course, by faulty methods of instruction, and by unwise choice of subject matter.

As to purpose, intuitive geometry has practical value, pleasure value, and preparatory value,—and these are their order of importance. Its practical values are:

a. To develop knowledge of the fundamental geometrical concepts, terminology, notation and truths;

b. To train the hands in the use of the common drawing instruments, the straight edge, the square, the protractor, and, to an extent, the compasses;

c. To train the eye to see geometrical relations;

d. To train the mind in methods of studying geometrical data by inductive processes.

e. To give general training in desirable habits of thought, achievement, and conduct,—and one school man of wide experience has said that no other subject of the whole elementary curriculum will do it better.

Its pleasure value lies in the fact that, when the subject is taught intuitively by a teacher using skillful modes of instruction, the pupils do derive great pleasure from the study, while accomplishing all the practical purposes of the course.

Its preparatory value for the pupils who go into demonstrative geometry is beyond question,—provided temperateness has been observed in selecting the subject matter for the course in intuitive geometry. The mistake made years ago, and being made now in some cases, is that of trying to teach too much geometry. In doing so, the pupil is burdened, and the life of the course in demonstrative geometry is sapped in advance. All the real values of the course can be attained by a limited study of geometry. The value depends chiefly on the methods and modes of instruction. The most practical facts of geometry should be selected, first, and these, without question, are the mensuration theorems of plane and solid geometry, for the more common figures, the manner of constructing some of these figures, and a few of the more common facts about them. With this should go instruction in the necessary concepts, terminology, and notation, to facilitate the instruction. The study of accurate constructions with compasses, of the ideas of congruence, similarity, symmetry, and numerical trigonometry have at best questionable value in the junior high school. In particular, intuitive geometry is not at all synonymous with constructional geometry; neither necessarily implies the other. Constructional geometry may indeed lack most of the qualities which a good course in intuitive geometry should possess.

There is reason, time, and place for study of literal arithmetic and the beginnings of algebra prior to grade nine.

The use of literal numbers in formulae may be said to be so general now that knowledge of literal arithmetic may be regarded a part of elementary education, or of lower junior high school education. Literal arithmetic may be defined as algebra, without negative numbers,—or, postively, algebra of positive integers and fractions. The study of it is not difficult and does interest pupils. It correlates well with arithmetic, giving desirable training in computation; it is a step up in mathematical understanding—a step up from the level of particular numbers to the level of numbers in general.

These are good reasons for studying it before grade nine. How long before grade nine? A degree of temperateness will be wise here as in the case of geomtry. Do not start everything in grade seven; keep something new for grade eight,—not to mention the fact that there is quite enough to do now in grade seven. There is place for the simplest possible use of the formula in grade seven. In grade eight, the study and use of the formula may, and should, be made the large undertaking of the grade. The mathematics of grade eight has been especially barren, more so than that of grade seven. By organizing it around the concept of the formula, dignity is given to it, and a new appeal is made to the interest of the pupils. To do it properly, and thus make the course contribute the maximum of mathematical education, it becomes necessary to teach certain ideas about the equation. All this can be done in two or three weeks of time early in grade eight, after which the formula and equation can be used and impressed during the balance of the year.

Toward the end of grade eight, there is argument for study of the beginnings of algebra. The pupils this time are beginning to look to the "high school", even when they are already in a junior high school, and much more so when they are in an eighth grade class. They are getting "spring fever" in many cases. Algebra is particulary adapted to the needs of this situation. The children like it, and they can do it, notwithstanding all the current nonsense about not permitting children with low I. Q. to study algebra. Give them a chance. Even criminals are assumed not guilty in this country until they are convicted. Why convict children of incapacity to study algebra before they have tried the subject. Does it tie up with the rest of the work in grade eight? That depends upon what is done. Does it prepare for grade nine? That also depends upon what is done.

As in the cases discussed previously, temperateness is needed here. Not quantity but quality of instruction is important. Algebra has been a failure in eighth grade in many places—chiefly because the emphasis has been misplaced. A survey of the whole of first year algebra has often been attempted, and that is most pernicious. In the first place, quality of instruction under such circumstances is impossible, as the teacher in the ninth grade discovers when she receives the pupils. In the second place, the novelty of almost all the topics of the ninth grade course in algebra has been destroyed,—thus destroying one of the large opportunities

of the ninth grade teacher and pupil. In general, this beginning work in grade eight should teach certain topics from the first part of algebra, from the modern point of view as to method; should teach them thoroughly, although using relatively simple examples, so that the pupils will carry over into grade nine some definite ideas, skill, and habits. Among these topics, there should be the simple equation, and its use in solving problems, and the concept of positive and negative numbers. Most emphatically, this last topic is not so difficult that it needs to be avoided until the middle of grade nine, as has been proposed. The pupils in grade eight can master it and enjoy doing so.

Reference has been made repeatedly to method and mode of instruction. By method, one refers to the manner of developing the subject; by mode, one refers to the manner of managing the class,—to such matters as supervised study, etc. Most of the success of the pupils and much of the value of the mathematics to them depends upon the methods and the modes employed by the teacher.

In the elementary grades, the memoriter method predominates; the pupils are shown how to perform a process, are given much practice, and are expected to develop habits. One of the large changes in instruction which should take place in the junior high school mathematics is that of developing in the pupils a feeling for the necessity of proofs for mathematical principles or truths. In these grades, development by induction is particulary effective. It becomes a unifying principle for the mathematics of these grades,—a most worthwhile one, since induction is the type of thinking which is most commonly employed in extending knowledge. Every topic taught in junior high school mathematics should be rationalized by induction. Unfortunately, all beginning teachers, and many experienced teachers need instruction in the technique of an inductive lesson. Often the lessons in the text are properly taught, and in such cases, teachers, especially young teachers, ought to be encouraged to follow the book. Just to digress a moment, has not "following the book" been made too unpopular? At this time when experimenting with a new type of mathematics for these three grades, it is especially unwise to lacerate the book; it is far beter to select a text which as nearly as possible suits the needs of the school, and then follow it.

Deductive thinking is exemplified best in demonstrative geometry. It is a higher type of thinking, calls for greater concentration, subordinates memory work, and, to be of great value, must be used independently in the solution of original problems. It has been proposed that demonstrative geometry be placed in the junior high school. This is contrary to the judgment of the mass of experienced teachers. The argument for placing it there is that pupils should be given the opportunity to "explore" this field of mathematics to determine their capacity for further study in it. The implication is that this be a brief exploration. There can be only one result from such a brief exploration, for the majority of pupils, under the conditions existing in this country, namely, failure to derive any

real benefits, and, as far as diagnostic value is concerned, a thoroughly erroneous judgment as to the ability of many pupils. Many, less capable, require patient long continued teaching to attain any success in the subject. For such, the result of a brief period of study is likely to be a dislike for it, and, to many teachers, the temporary difficulty experienced by these pupils will be regarded sufficient evidence of incapacity to warrant the recommendation that such pupils be excused from taking geometry. The bearing of all this on junior high school mathematics is that it is unwise to do any demonstrative geometry in grade nine.

As to mode of instruction in junior high school mathematics,—a minimum of recitation (re-ci-tation) mode, and a maximum of active working in class is most likely to bring mastery of elementary mathematics,—and certainly there cannot be any question that mastery in some degree shall be attained, instead of mere contact, "for appreciation." New topics should be studied in class as class exercises, under the direction of the teacher, especially in grades seven and eight, and lower nine. They should be followed by various forms of drill exercises,—oral class drill, blackboard class drill, and finally an abundance of individual seat drill.

Whether to segregate pupils in sections on the basis of some sort of intelligence test, or diagnostic test, is in most schools an interesting but academic discussion, since there are not enough pupils usually to make sectioning possible or since administrative difficulties prevent placing pupils in the groups into which they would apparently belong. As a matter of fact, a much more profitable matter for discussion in all schools is the management of classes of unsegregated pupils, to the end that individual needs and capacities be met. In mathematics at least this is entirely possible, if classes do not exceed thirty pupils, if the teacher will endeavor to have a maximum of what has been called, above, individual seat drill. At such times, the pupils should be encouraged and helped to do all they can, no two doing, necessarily, the same amount. The teacher can pass about among them, giving guidance and suggestion as may be necessary. Some of the pupils will master in this way a block of material which earns for them only a rank of fair, others a rank of good, etc.

In closing, may it be remarked again, that a brief article, such as this, can give only a sketch of ideas which seem pertinent to the large subject, junior high school mathematics.

ABILITY GROUPING, MARKS AND PERFORMANCE

H. L. Harrington

The intermediate schools of Detroit have been attempting the homogenous grouping of pupils according to ability since the new program of studies was put into effect some two years ago. In accordance with this policy, the pupils

of the Jefferson Intermediate School were so grouped when the school was organized last fall, (Sept. 1923). What follows is a discussion of this grouping, its relation to the marking system, and to performance on the various levels of ability as established by the system of grouping under discussion, in the 7B grade, during the first semester of 1923-24.

Ability, as the term is used here, is indicated by a combination of teacher's estimate and ratings made by group intelligence tests. The method followed in grouping is described below.

The Psychological Clinic at about the middle of the semester, gives an intelligence tests to all 6A pupils in schools contributory to the intermediate school. The intelligence rating of each pupil tested- is sent to the intermediate school in terms of A, B, C plus, C, C minus, D and E. At same time a request is sent to each contributory school, asking that the 6A grade teachers in these schools furnish the intermediate school with an estimate of each pupil's general school perfromance expressed in terms of 1, 2, 3, 4, 5; using the ordinarily accepted interpretation of these terms. These data are then recorded on the individual enrollment cards of each pupil, on the two sets of data, i. e. the intelligence rating and teacher's estimate are tabulated in the form given in Table I.

TABLE I

Tabulation of intelligence Ratings and Teacher's Estimate of 7B Entering Class Jefferson Intermediate School

Elementary School Estimate	Intelligence Ratings							Totals
	A	B	C+	C	C–	D	E	
1's	10	7	5	7	1	1	–	31
2's	10	14	26	29	12	3	–	94
3's	5	14	28	33	23	12	–	115
4's	1	–	3	6	11	6	4	31
5's	–	–	–	1	–	1	3	5
Totals	26	35	62	76	47	23	7	295

Non-classified—19

Eight sections were made up in the grade by giving equal weights to intelligence rating and teacher's estimate. That is, Section I was made up of the 10 pupils marked both A and 1 in Table I; plus the 10 marked A, 2; plus the 7 marked B, 1; plus the 5 marked A, 3; plus 5 of the 14 marked B, 2; an so on, for the other seven sections.

Grouping of this sort seems at once to call for some readjustment in the marking system ordinarily used. Ordinarily, most schools use the five step system, with marks, 1, 2, 3, 4, and 5, or A, B, C, D, and E, with the assumption that in the long run the marks in any section will be approximately 10 per cent, 1 or A; 15 per cent, 2 or B; 50 per

cent, 3 or C; 15 per cent, 4 or D; and 10 per cent, 5 or E. Obviously this practice can no longer hold with sections segregated according to ability, since if it did, that is, if the whole range of 5 marks were given in a section so selected, there would be 3's and 4's of a "I" or highest section to be compared with 3's and 4's of an "VIII" or lowest section, when these marks would logically represent a different performance in each section.

In an attempt to have marks comparable and meaningful the following procedure was followed in the Jefferson Intermediate School.

Assuming that the marks of the 316 pupils in the grade would, under the heterogeneous system, group themselves according to the so-called normal curve of distribution, 10 per cent or about 32, would receive 1's; 15 percent or about 48 would deceive 2's; 50 percent or about 108 would receive 3's; 15 percent or about 48 would receive 4's; and 10 percent or about 32 would receive 5's. On this basis, Diagram I shows how these various marks might be expected to be found in the various sections.

Diagram I

Sections	I	II	III	IV	V	VI	VII	VIII
Marks	1's	2's			3's		4's	5's

It is seen in Diagram I that about 3-4 of section I should receive 1's, the rest of section I, and nearly all of section II should receive 2's, a small part of section II, all of Sections III, IV, V, VI and a small part of section VII should receive 3's, most of section VII and a small part of section VIII should receive 4's, and nearly all of section VIII should receive 5's.

No one, of course, would attempt to force marking into any such rigorous form as is suggested above; however, in order to bring the general problem to the attention of teachers the following directions were given at the first teachers' meeting of the year.

"The introduction of a system of ability classification makes necessary a readjustment in the usual system of marking. In sections where pupils of superior ability are segregated it is reasonable to expect a preponderance of the higher marks, and in the sections of lower ability a preponderance of lower marks. Assuming that we follow the usual scale of marking, that is, 1, superior; 2, above average; 3, average; 4, below average; and 5, failure, some such distribution of marks among the various sections in academic or semi-academic work as follows might reasonably be expected.

Mark	Mark
Section 1—1 or 2	Section 5—3 or 4
Section 2—1 or 2-3	Section 6—3 or 4
Section 3—1 or 2-3 or 5	or last sections,
Section 4—2-3-4	depending upon number of sections.

It should be especially emphasized that teachers are not to refuse to give a pupil in a "VI" section a "1" if she believes that mark deserved, nor a "5"

to a pupil in a "I" section if it is deserved. This situation will probably not arise however, as such pupils would obviously be misfits in such sections, and the teacher should recommend their transfer to a more appropriate section."

During the semester standarized tests were given to the pupils of this grade in silent reading, composition, and spelling, and at the end of the semester a tabulation of teachers' final marks for the semester was made. Table II shows the correlation between the ability ranking of the various sections and the ranking of the sections made upon the other criteria mentioned.

Table II

Ability Classification	Reading	Composition	Spelling	Teachers' Final Marks
7B1	7B2	7B1	7B1	7B1
7B2	7B3	7B2	7B3	7B2
7B3	7B1	7B3	7B2	7B4
7B4	7B4	7B7	7B6	7B5
7B5	7B8	7B4	7B7	7B3
7B6	7B5	7B5	7B8	7B8
7B7	7B7	7B6	7B4	7B6
7B8	7B6	7B8	7B5	7B7

(Ranking for teachers' final marks was made upon the basis of a total score made by giving each "1" received in the section a weight of "5", each "2" a weight of "4", each "3" a weight of "3", each "4" a weight of "2", and each "5" a weight of "1", adjustment being made to equalize slight differences in size of sections. Ranking in the standardized tests results is upon the basis of median scores.)

It appears from Table II that the correlation between these various criteria is by no means perfect, although the high sections do better on the whole than low sections. How wide the overlapping in teachers' marks in the various sections is, is shown in table III which gives for each section in all academic work what percentage the number of each kind of mark is of the total number of marks given in the section. That is, in 7B1, 18 percent of marks were 1's; 49 percent, 2's; 23 percent 3's; 9 percent 4's; and 0 percent 5's.

Table III

	7B1	7B2	7B3	7B4	7B5	7B6	7B7	7B8
1's	18	12	2	3	4	1	1	3
2's	49	36	23	30	24	12	11	16
3's	23	38	47	42	40	42	34	37
4's	9	14	27	22	29	40	49	43
5's	–	–	1	3	2	4	4	1

The rather wide overlapping of marks in the various sections and lack of more perfect correlation may be due to a number of causes:

1. The scheme used in classifying pupils into sections is only accurate to a very rough approximation.
2. It is probable that teachers still tend to judge pupils in each separate section on the basis of a 5 step marking system for that section ,rather than for a range of 1 or 2 steps. This tends to lower the marks of many pupils in the high sections, and raise those of many pupils in low sections.
3. It is probable that it is quite impossible with the measures at present available to segregate a grade into 8 groups, each of which can be expected to hold its relative place in any academic test which might be applied. Possibly this might be done if only 3 groups were made, with several sections in each group, as is being done in the Detroit elementary schools under the so-called X, Y, Z classification.
4. Performance is probably only one factor marked by the teacher. The mark no doubt also reflects the teacher's attitude toward such non-intellectual qualities as effort, regular attendance, docility, pleasing personality, and, and other desirable qualities. Perhaps this is rightly so.
5. It should be admitted, also, that the adaptation of subject matter to the various levels of ability has not as yet progressed beyond the preliminary stage.

Is is suggested, that in view of the difficulty, at least at the present stage of affairs, of devising courses of study adapted to various levels of ability, and of applying a marking system to performance at the various levels of abili, ty, that division of pupils by intelligence tests, combined with other significant criteria, into three levels of performance, is sufficient. These levels might be designated X, Y, and Z, or in some similar manner, and pupils might be given a mark which would indicate both the group to which he belongs, and performance within that group, as X,2; Y,1; Z,5. This would result in a 15 step marking system covering the whole school, in which an X-5 would be immediately higher than a Y-1; in place of the 5-step system now used in most places.

The whole problem is very complicated, however, and it probably will be some time before an entirely and satisfactory solution is found.

CORRELATION AS A UNIFYING AGENCY IN CURRICULUM MAKING

Helen S. Watson

The organization of the elementary schools gives oportunity for close correlation of subjects. This should be continued in the junior high school in

so far as it is possible and practicable. The new environment of the junior high school with its greater freedom, will be as bewildering to the little seventh grader as the great mass of ninth grade children is to the boys and girls entering the traditional four year high school. Efforts should be made to make the transition a gradual one, and one way is to have the work in as complete wholes as possible in order to avoid choppiness. There is a * consensus of opinion in favor of general mathematics, general science, social science, as exploratory courses in the major fields of learning. These subjects must possess not only variety in content but unity in organization of material. The same general principles should be applicable to the program of studies as a whole. Variety to meet the individual needs is offered in different fields in both the regular subjects and in the electives. Unity to develop the children as a whole may be attained partially through correlation of subjects. Until spelling and the use of correct English in speaking and in writing are considered a part of every subject in the curriculum, much of the good work done in the English Department in an attempt to establish good habits along these lines will be greatly handicapped. Parts of speech and constructions can be given special stress in English at the time that they can be of most assistance when children are beginning a study of foreign languages. If the administrators have vision, if the faculty members have cooperation, if there are leaders among the teachers in the school who can work out details, the deadly routine of the stereotyped program can be vitalized so that school is the joy that it should be to the adolescent youth. Concentration and effort will be gained by capturing the interests of the child. Teachers might be rated on the amount of education they have "sold" to the children.

One junior high school * has found great value in motivating a great part of its work around a project that is given once a year, thereby becoming a function anticipated by the community. The last effort culminated in the dramatization of an interpretation from Arabian Nights of "Alladin's Lamp." For months the project was in progress. The center was around the study of the fairy tale which naturally expanded to include the group of myths, legends, and folk lore. This appealed strongly to the adolescent characteristics of imagination, adventure, romance and action. The culimation was the satisfaction of the ego through the dramatic presentation.

The art department applied the principles of art that are regularly in its course of study to the making of posters, designing costumes, and the creating of stage scenes. Each art class took one set of scenery for its responsibility. There was a cave scene, a court scene, and a palace. The colors were brilliant and the designs were spectacular. Here, again, was a chance of appeal to adoles-

* Glass, J. M. Present Curriculum Practices in Junior High Schools. Dept. of Supt. N. E.A. Second Yearbok 1924, p. 233-234 Washington, D. C.

* McKinley Junior High School, Los Angeles, California.

cent characteristics, the love of high color and the unusal. It became the business of the art department to inculcate the use of basic principles in the placing of the colors and in the making of the designs. Similarly, the sewing department used the principles laid down in the course of study by applying them to a motivated piece of work. Through careful buying of inexpensive materials it was possible to make wonderful court dresses and headgear. The fans, gewgaws, cushions, swords, and shields were cheerfully and happily made by the youngsters. It was necessary to know types of architecture, styles of costume, of the period represented. The visual education and library departments furnished illustrative material. The shop department was busy lending its hand in all phases of stage craft. A group of boys who are not particularly fond nor capable in academic subjects had the responsibility of shifting stage scenery. The boys in electricity received aid in producing light effects through the courtesy of one of the theatres that makes a specialty of the work. The physical education department trained the girls for the rhythmic dances in the court scene. The printing department managed the finances. The music department had orchestral accompaniment and even had some original compositions. In fact, most of the departments were directly or indirectly cooperating to make the project a success. It was not the final presentation only, but the whole effort that was educational. Not only was the course of study covered, but the interests and activities of the children were motivated about things worth while and scientifically worked out. The democratic cooperative spirit of the school was better for having had this common interest and the community was closer to its school.

Another opportunity that can be grasped in furthering the development of the child as a whole, may be offered through concrete suggestions to teachers to show how training for elements of character can be inculcated in the pupil experiences of each subject.

Unless the moral principles which make up ethical character are consciously developed in each and every activity of the school, the main purposes of education are defeated. The monograph on "Character and Conduct" in the Los Angeles City High School Course of Study series is the result of the work of many teachers to enumerate the various possibilities in the different fields in furnishing pupil experiences that will develop right moral attitudes. The Iowa plan furnished many suggestions. The elements of character building are classified under preparation for:

1. Health
2. Life in the group.
3. Civic relations.
4. Industrial and economic relations.
5. Vocations.
6. Parenthood and family life.
7. Mastery of tradition.
8. Appreciation of beauty.
9. Use of leisure time.
10. Reverence.
11. Creative activities.

If these are analayzed into specifics and applied to English, to science, to other subjects taught and to the student

activities, the field of character training will be fairly well covered. Some of the pupil experiences listed under mathematic are:

Objective I—Preparation for Health.

All activities which contribute to the mental poise, alertness and vigor should, by virtue of this, contribute to physical well-being.

1. Poise—The pupil should prove propositions "under fire," constantly checked by his fellow pupils.

2. Alertness—He should constantly check his fellow pupils and himself in false statements in proofs.

3. Vigor—He should repeatedly struggle to establish the truth or falsity of a proposition.

4. He should grow to make his actions systematic, methodical and definite, which attributes are conducive to careful attention to the physical needs.

Objective II—Preparation for Life in the group.

1. He should learn to discern between the heart of a subject and externalities.

2. He should discover that effect inevitably follows cause, for example, by noting that a slight mistake in the first part of a solution makes everything that follows incorrect.

3. He should discover from class relations, that while he can secure help from those around him day by day, yet in tests and examinations it is necessary for him to stand alone.

4. He should master salesmanship by finding the best method of explaining a problem to a classmaate.

5. By now taking the floor, now yielding it to another, the pupil should learn to realize his own responsibility to assume on important role in any activity, and also to realize another's right to that role.

6. By loyalty to class through activities engaged in together, such as computing problems, he should develop loyalty to the group.

Objective III—Preparation for Civic Relations.

1. He should draw graph to illustrate the needful and the needless expenditure of money.

2. He should graph statistics to show the comparative wage of boys who remain long in school and those who do not.

Objective IV—Preparation for the use of Leisure Time.

1. Through solving original problems, he should learn the joy of mental activity.

2. He should work on radio.

3. He should learn to use and save his income so that in later life he may have leisure to enjoy.

4. He should compute dimensions of tennis courts, baseball diamonds, standing of teams, etc.

Other subjects such as social studies and English offer more obvious opportunities for the forming of ideals of character, if the teacher understands the psychology of the child and the aims to be attained. There is a tendency to recognize the accomplishment of pupils in conduct by honor societies, merit systems, and actual grading on report cards of such qualities as thrift dependability and courtesy.

AN EXPERIMENT SHOWING THE VALUE OF STANDARIZED TIME TESTS IN THE FUNDAMENTALS OF ARITHMETIC

Arnold M. Christiansen, M. A.

In order to check up the junior high school pupils of the Training School of the Winona State Teachers College on their ability to perform the fundamental processes of arithmetic, the writer gave them the Courtis Standard Supervisory Arithmetic Test A, Form 2. The test was given September 25, 1923. Thirty-five seventh grade pupils, nineteen eighth grade pupils, and sixteen ninth grade pupils were tested.

The results of the test showed that, on the whole, the junior school was more or less below standard in ability to handle the fundamental processes in arithmetic. To be exact, only two pupils, were, as classified by the test, up to standard ability; fifteen only were classified by the test as pupils for whom the regular work would furnish sufficient drill; while the remainder of them (fifty three) were classified as children who were in need of thorough drill, special attention and extra drill, and as children for whom some special adjustment of work must be made.

On the basis of this situation it was decided not only to improve the ability of the eighth and ninth grade pupils to perform the fundamental processes in arithmetic (the seventh grade to be given special attention later) but also to carry on an experiment to determine in a measure the value of standardized time tests.

Accordingly, beginning with the winter term (December 3 to March 7) the pupils of the eight and ninth grades were given short standardized time tests at opening of their mathematics class period. Daily and weekly records of the results were kept. These records were posted so as to excite competition. The children were told that the purpose of the tests was to help them to improve their ability to add, subtract, multiply, and divide; that the purpose of the tests was to bring them up to standard ability in the fundamentals of arithmetic, if posible. It is needless to say that there was considerable of both individual and class competition and that the pupils enjoyed the tests.

The seventh grade served as a control group for the experiment, and, were, accordingly, not given the special drill work during the winter term.

The standardized time tests used for the experiment are those found on pages 153-150 in *Arithmetic Essentials, Book Three.* * On those pages twenty-two tests are given. Eighteen only of these were used, however, for four of them, namely, numbers XIII, XIX, XX, and XXI, could not easily be mimeographed. Each test, generally speak-

* Drushel-Noonan-Withers, Arithmetical Essentials, Book three, Lyons and Carnahan, New York, 1921.

ing, was given three time, i. e., each test was used for three days.

The tests were short, the range of time of actual work of them being from 1 to 10 minutes, the median being 3 minutes, and the average being exactly 3 3-4 minutes. It is estimated that not more than seven minutes on the average were consumed at the beginning of each class period to give, score and record the results of each test. Four classes conducted in part by four student teachers took the same test each day. When the teachers had given the test, the pupils exchanged test papers, and checked the errors. The pupils' scores were then read off and recorded on a chart on the board so that all might see the results. To insure fairness and accuracy of the scoring, the teachers immediately collected the tests and during the day rechecked them.

Puupils who were absent from class were given make-up tests upon their return to school. Hence, every pupil was given all of the tests.

The drill-testing program continued for twelve weeks, but more exactly fifty-four days. One day before the end of the quarter (March 6), the junior high school pupils were again tested with the Courtis Standard Supervisory Test A, Form 2. The March testing was done under the same conditions and in the same manner as the September testing was done. The Courtis test was scored by the writer and one other person, the former checking the other. Hence, it is believed that the scoring was accurately done.

While it might be interesting to report all of the detailed records kept, there is not space enough here for that purpose. Only the most significant figures, therefore, will be presented.

The results obtained by the drill-testing program and by the Courtis test are set worth in Tables I and II. Table I is concerned with the results of the twelve weeks of drill-testing and with the September and March testing of the eighth and ninth grades with the Courtis test, while Table II shows the results obtained by giving the Courtis test to seventh grade pupils, who made up the control group.

From Table I we see that the standard numer of drill tasks for the twelve weeks was 1,007. The record shows that the range of tasks performed correctly was from 543 to 1,000, that the average number of tasks right was 845.1, while the median was 862. The record also shows that none of the pupils met the twelve weeks standard of drill tasks. It shows that one pupil fell short by only 7 tasks in meeting the standard while the least succesful pupil feli 464 tasks short of meeting it. The average number of tasks that the pupils fell short of meeting the standard number of drill tasks was found to be 161.8, while the median was found to be 145. It will be noted that the September

TABLE I

Showing the improvement effected by twelve weeks of practice on the command of the fundamental processes of arithmetic as shown by the groupings made by the Courtis Standard Supervisory Arithmetic Test A, form 2, which was given to thirty-five eight and ninth grade pupils September 25 and again March 6, 1923-24.

Table I

Pupil	Standard number of tasks for 12 weeks 1007	Number of tasks right by pupils in 12 weeks	Number of Tasks below 12 weeks Standard	Rank of pupil	September Grouping	March Grouping	Gain by Groups
1	———	1000	7	1	I	I	0
2	———	977	30	2	III	I	2
3	———	976	31	3	III	I	2
4	———	958	49	4	II	II	0
5	———	956	51	5.5	IV	I	3
6	———	956	51	5.5	IV	I	3
7	———	944	63	7	IV	III	1
8	———	942	65	8	II	I	1
9	———	933	74	9	III	I	1
10	———	924	83	10	III	I	2
11	———	920	87	11	III	I	2
12	———	898	109	12	III	II	1
13	———	896	111	13	III	II	1
14	———	886	121	14	II	I	1
15	———	885	122	15	II	I	1
16	———	882	125	16	III	I	2
17	———	880	127	17	II	I	1
18	———	862	145	18	III	III	0
19	———	853	154	19	IV	I	3
20	———	838	169	20	IV	II	2
21	———	835	172	21	IV	II	2
22	———	827	180	22	III	III	0
23	———	824	183	23	IV	IV	0
24	———	821	186	24	III	III	0
25	———	820	187	25	III	II	1
26	———	806	201	26	III	III	0
27	———	790	217	27	III	II	1
28	———	781	226	28	III	II	1
29	———	736	271	29	IV	II	2
30	———	729	278	30	V	III	2
31	———	715	292	31	V	II	3
32	———	704	303	32	V	III	2
33	———	698	309	33	V	V	0
34	———	585	422	34	V	IV	1
35	———	543	464	35	V	IV	1
Totals		29,580	5,665	—	118	72	46
Averages		845.1	161.8	—	3.37	2.06	1.31
Medians		862	145	—	III	II	1

Meanings of the groups as given by Dr. S. A. Courtis:

Group I Children of standard ability.
Group II Children for whom regular work will furnish sufficient drill.
Group III Children in need of thorough drill.
Group IV Children who need special attention and extra drill.
Group V Children for whom some special adjustment of work must be made.

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groupings made by the Courtis test shows only one pupil of standard ability, five pupils for whom the regular work would furnish sufficient drill, fifteen pupils who were in need of thorough drill, eight pupils who were in need of special attention and extra drill, while it shows that as many as six pupils should have special adjustment of work made. In more concise figures, the September testing showed that the eighth and ninth grades as a whole were seriously in need of thorough drill in the fundamentals of arithmetic, as the average group was found to be 3.37 and the median group III. A further inspection of Table I shows that after the pupils had taken the special drill work there was a decided improvement in their ability to handle the fundamental operations in arithmetic. The March groupings made by the Courtis test shows that as many as fourteen of the pupils were of standard ability, that ten would now get sufficient drill through the regular work, that not more than seven pupils were still in need of thorough drill, that as few as three pupils were still in need of special attention and extra drill while only one pupil still required special adjustment of work be made for him. In other and more concise words, the eighth and ninth grade pupils, as a whole, had improved to the point where they could get sufficient drill from the regular amount of work that the course in mathematics would furnish, as the average group now was found to be 2.06 and the median group II. The last column in the table shows the gain each pupil made. It shows, briefly speaking, that the average pupil improved 1.31 groups, and that the median pupil improved one group.

No one will deny that these figures are not conclusive, but the question still remains whether the control group improved very much during the period that the eighth and ninth grade pupils were having the special drill; and if the group improved, then how much did it improve. Facts on this question are set forth, as earlier stated, in Table 2.

From Table 2 we see that the September testing of the control group

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Table II

Showing the lack of improvement in the command of the fundamental processes of arithmetic of thirty-five seventh grade pupils who served as the control group as shown by the groupings made by the Courtis Standard Supervisory Arithmetic Test A, form 2, which was given to these pupils September 25 and again March 6, 1923-24.

Pupil	September Grouping	March Grouping	Gain by Groups
1	I	II	-1
2	II	II	0
3	II	II	0
4	II	II	0
5	II	III	-1
6	II	III	-1
7	II	II	0
8	II	II	0
9	II	II	0
10	II	III	-1
11	II	II	0
12	II	II	1
13	III	III	0
14	III	III	0
15	III	III	0
16	III	II	1
17	III	II	1
18	III	III	0
19	III	III	0
20	III	II	1
21	III	IV	-1
22	IV	III	1
23	IV	III	1
24	IV	IV	0
25	IV	II	2
26	IV	III	1
27	IV	III	1
28	IV	V	-1
29	V	V	0
30	V	V	0
31	V	IV	1
32	V	IV	1
33	V	IV	1
34	V	V	0
35	V	III	2
Totals	114	105	9
Averages	3.26	3	.26
Medians	III	III	0

This table shows that there was a slight improvement of the control group in ability to handle the fundamental proceses of arithmetic in March as compared to that ability in September. This slight improvement was

probably due to the fact that the class had worked with fractions, with arithmetic in general, and to the fact that the class had taken the Courtis test once before.

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showed only one pupil up to standard ability, that ten pupils were classified as children for whom the regular work would furnish sufficient drill, that ten pupils were in need of thorough drill, that seven pupils needed special attention and extra drill ,and that seven were in need of special adjustment of work. The table shows that in September the average seventh grade pupil was in serious need of thorough drill, while the median child fell into Group III. The March testing showed that not a single seventh grade child was up to standard ability, that thirteen were now classified as children for whom the regular work would furnish sufficient drill, that thirteen were in need of thorough drill, that five of them were still in need of special attention and extra drill, and that four would still need some special adjustment of work be made for them. Hence, we see that while there was a slight positive difference in the ability of the control group to perform the fundamental processes of arithmetic in March as compared with its ability in September, the improvement was almost negligible . That this is true becomes more evident when we note the average and median degrees of improvement made between the September and March testing. The average degree o fimprovement was .26 of a group while the median degree was 0, as shown by the last column of Table 2. It will also be observed by inspecting the last columns in the two groups in March from what they were in September all made positive gains, while six of those in the control group who fell into different classifications in March made negative gains, that is, they dropped into lower groups.

The only conclusion that one can draw from the results presented in the foregoing report is that giving standardized time tests is a very good way of developing ability to handle the fundamental processes in arithmetic.

As a final word to this article it may safely be said that the method outlined and discussed above is very simple, is easy to operate, and gets good results. Any teacher can use the method and be reasonably assured of success.

EXTRA CURRICULAR ACTIVITIES

N. C. Heironimus

The organization of the Junior High School as a distinct school unit has brought to school administrators many new problems, one of which is the organization and management of extra curricular activities. The form of the new unit in itself gave opportunity for such activities and the opportunity was an invitation immediately accepted. Bringing larger numbers of pupils of the same age together and grouping them at least partly according to abili-

ties and interests led to a demand for many lines of activities hitherto uncalled for. The purpose of the junior high school to act as an experimental field as to interests was an invitation to both pupils and teachers to "try out" lines other than those provided for in the program of studies.

Naturally more or less confusion of effort resulted at times, and it behooves the thoughtful school administrator to scrutinize very carefully every proposition looking to new or untried efforts along this line. He may well take time to determine what tests to apply before adopting any radical departure from the usual.

We should help pupils to organize and al and worth while to children of junior high school age. It is worse than useless to merely copy the activities of colleges and senior high schools.

We should help pupils to organize and conduct activities in the light of the aim and condition immediately at hand. There are often temporary conditions that call for organizations and efforts that would fail entirely under normal conditions. The numerous lines of wartime efforts are examples of this class.

We needs must move slowly. A few activities carefully organized and supervised are much better than a larger number adopted hurriedly and let go in a haphazard way.

Care should be taken from the start to limit the participation of the overambitious pupils and to encourage the more timid to participate.

Above all we must work with the pupils and not merely for them. Even though mistakes result from their lack of experience it is much better to have the co-operation of the pupils in planning their activities than to hand these down ready made.

We may next stop to inquire what lines of extra-curricular activities have proved their worth in junior high schools. To the writer these seem to be of two rather distinct groups or classes; those which are closely connected with school administration and may be termed semi-official, and those organized to meet special interests of groups of pupils.

In the first group we find pupil councils, congresses, health boards, police forces, etc. Here the temptation is especially strong to copy the civic organizations of adult societies regardless of their adaptation to school needs. Nothing could be more fundamentally wrong. To organize as a school city, with officials who have no work to do, is a waste of effort. Such organizations ,however, must have some real work to do or they will not function in the lives of the pupils. On the other hand it is equally necessary that the pupils realize the necessity of subordinating all actions of these groups to the properly constituted authority of the school.

The organization for special interests of course vary widely. The most common are orchestra, glee clubs, dramatic societies, literary societies, debating clubs, science clubs, athletic associations and teams, social clubs, class organizations, etc. Some of these become permanent in nature and frequently are taken over as a part of the regular program of the school. Others come

and go, depending on the varying interests of the school population.

Summing up we may say: extra curricular activities are well worth while, meeting a real need in the life of the child and giving valuable social training; they need to be organized and administered in the light of their respective purposes; there must be a proper limitation of participation, and also encouragement for the more backward pupils to participate; above all they must be carefully supervised, permitting a maximum of self-direction on the part of pupils without giving opportunity for harmful experiments.

In an experience of thirty years with adolescents the writer has tried out a number of interesting experiments and has in operation now a number of these that have been found worth while and also a few that are still in the experimental stage. A description of the plans under which these operate may furnish material for another paper later on.

TEN NATIONAL PROBLEMS

Robin Lynn Hamilton

10. TOO FEW GOOD MEN.

Bryce pays a wonderful tribute to the amount of talent in American life and goes on to show that with our high standard of living and educational advantages that this talent should provide us with a larger suppy of mental ability in public life than can be shown in any other nation. However, he says that it is obvious that for some reason or other talented men in America shun public service. He says that this defect is one that cannot help but have an adverse effect upon governmental affairs and one of increasing seriousness as our population grows and the number of public officials keeps pace with this growth.

He pays a high compliment to the men of most brilliant gifts who occupy the front ranks of our public servants but he says that those of the second rank and employees down the scale upon whom the great weight of the matters which are subject to their consideration. It has been notorious in the past few years in many governmet departments that as soon as a man could qualify as an authority in any branch of public affairs, which resembled matters carried on by industries, that these men were constantly being hired away from the government at many times the salaries which the government paid. This has been particularly true in the departments having to do with commerce, agriculture labor and the division of the treasury having i ncharge the collection of revenue. Men capable of doing this sort of work whether nationally or for the separate state have shunned public service more and more as the years have gone by.

Any American looking at the trend and consequences of such a national and state policy cannot help but acknowledge the gravity of such a situation and wonder to what end it will lead and to consider possible remedies

for it. Certainly one very patent remedy to make public life more attractive would be to readjust salaries so that they might be somewhat comparable to those obtainable in industry. In addition some way must be discovered to make the tenure of all governmental offices below the policy making grades non-political. There are a number of civilized governments in which, however often the cabinet changes is maintained all the remainder of the governmental machinery. It might be pointed out that the overthrow of government in Great Britain, for instance means only the change of about twenty men so far as public life is concerned. A continuing functioning by trained men naturally results from such a practice as this. It is very seldom an outstanding man remains long in American public service unless he has an independent income. Of course, such a state of affairs, over a long period of time breeds deterioration in the government and the lessening of faith in it.

This is the conclusion of brief comments on the ten national problems that Bryce called our attention to as defects in American political life shortly before his death two or three years ago. A defect in any commodity doesn't necessarily mean that the strength of the article is so seriously impaired that it will no longer serve its purpose nor is a defect necessarily a malignant growth that is certain to destroy the utility of the body as a whole but these ten defects are of sufficient importance that their removal or change into less harmful form is a matter of moment to every present day and future citizen of the republic. It is to be remarked that of the so called modern democracies the United States is the one longest in existence and has been able to continue with minor adjustments for close to 140 years. But 140 years is not a very long time as history goes and whether it shall continue indefinitely depends upon the serious thought of large numbers of patriotic men and women who unite to remove national and local defects as they are brought to light.

The time when the boys and girls of the present junior high school ages will assume their responsibilities as citizens is only a few years away. If with the idealism of adolescence they cannot be made to see that there are still problems for them to solve then the hope for a free and progressive America will become more and more dim with the passing decades. On the other hand if their duties as torch bearers can be made sufficiently a part of their thought America will have nothing to fear in the coming years. Permanent defects and unsolved problems spell eventual downfall. Temporary defects and solved problems are the means by which an individual and a nation may progress.

DON'T CHEAT YOUR CHILD

John Amid

(Reprinted by permission from Collier's Weekly, March 15, 1924)

"Before he leaves school every youngster should have his chance." This is the basic idea in Rochester, N. Y., a lucky city. Before the schools let go, the boys and girls have an opportunity to make good in something they like. Tommy Jones may be best in Latin or algebra, But Bill Budy gets a fine mark in the electric wiring he's so crazy about!

I went to Rochester in a doubting mood. I'd seen junior high schools on the Pacific Coast, in the Middle West, in Detroit—all over the country. That they should flourish to better purpose anywhere in New York State than elsewhere seemed increrdible, for New York is handicapped by a centralized State school system that vests authority in a terrifying "Board of Regents."

Whenever I've tried to find out why the public schools in the prosperous residential suburb where we live aren't more up to date, and able to do more for our own children, teachers and principals alike have hastily fallen back on the Board of Regents. They've passed the buck to the centralized system that had made progress in one particular school or city supposedly impossible.

So when I found at Rochester junior high schools as far in advance of junior highs elsewhere at those other junior highs are ahead of the schools in my own suburb, I began to sit up and take notice.

If any community in the whole country, if any school superintendent, belives that no worth-while advance is possible because of State or local conditions, because of this handicap or the other—well, look at Rochester.

Fifteen years ago Rochester calmly threw the crippling Regent's examinations out of the window—except for the final years of high school. The other cities of the State, less daring, were aghast at such a rebellion. But nothing happened—except that the Rochester schools is a tall, powerful And kept on getting better, until today, in the matter of a new junior high-school development, they're setting the pace for the whole country.

Superintendent H. S. Weet of the Rochester schools is a tall, powerful man, bald and impressive, given to pauses and silence rather than speech. I heard one of his close associates and assistants say of him: "Weet has a great head and a great heart, and they balance nicely."

"Any youngster who's willing to apply himself," Weet told me, "deserves to succeed. He ought to succeed. In something. In the Rochester schools we try to teach children application. How to apply themselves. In the junior high school our problem is to find something that they like, that they can do well. Then, before they get away from us, they have a chance to taste success."

There Isn't Any Discipline

Arthur Heath, a small, eager, polite lad of fourteen, took me through the Washington Junior High School, oldest of the Rochester Junior Highs. I put myself entirely in his charge. "Show me the rooms where you've taken your

own course," I said. "Take me to the things you like best."

He led me unerringly to the shops. I found that in this school of seventh, eighth and ninth-grade children there were classes in millwork, in printing, in typewriting, in commercial art, in repairing automobiles, as well as history and science and the languages.

In one room boys were making coal hods. They laid out the patterns, cut the galvanized iron sheets, bent and soldered the metal, turned out a good-looking coal hod. There was no teacher particularly in evidence. Yet the work was coming along at a good rate. They liked it.

In a room where boys were working out problems in electric wiring, one of the older chaps followed my course with Arthur from point to point. When we were about to leave the room he couldn't hold in any longer. "Did you see that three-way switch we're fixing up?" he demanded. He took us in charge. He had all the pride of possession. You'd think he'd invented the whole room himself and was personally responsible for it. All the time the teacher of the room was absorbed in a piece of wiring of his own. He was available, if the boys wanted him—but it was obviously their room. I don't believe he was conscious of the fact that a visitor was present.

Everywhere there was the same informality and lack of conventional discipline, even in the regular classes of English and arithmetic. In one Latin class I saw fully one-third of the pupils standing up, and several conversations were going on at once. Finally the teacher finished writing something on the blackboard, and had to clap her hands for order so she sould be heard. The talk was all about Latin—not sweaters or dances or baseball. Hardly anyone even noticed Arthur and myself standing just inside the door.

"We try to make our boys and girls realize that this is their school," the principal told me. "It's all for them. We consider ourselves a community of three parts—scholars, teachers and the janitors who have to clean up and look out for the buildings. We're all dependent on each other. And everyone has a vote in all our affairs. Discipline? Mere restraint isn't discipline! Watch our children when they leave the schoolhouse, and compare 'em with a crowd coming out of a schoolhouse where there's been the kind of discipline that's really only repression."

"We've been trying out our junior-high-school idea here in Rochester since 1915," Superintendent Weet told me. We've tabulated the results. As elsewhere, we've done away with the break at the end of the eighth grade without merely substituting another. Our figures show that no more scholars drop out between the ninth and tenth grades —between junior and senior high—than between ninth and tenth—that is, at the end of freshman year—in the ordinary high school. We use the junior high school to keep the average child in school longer and use his time advantageously."

Junior as well as senior high-school teachers have to meet strict requirements.

In addition to the customary two years of normal-school training they must have had at least one year of

college and three of active teaching experience. To-day between three and four hundred—nearly one-fifth—of Rochester's teachers go to summer school each year. The city defrays the expense of one course (two hours a week) in the university each year for each teacher desiring it.

Through the seventh grade—the first year of junior high—Rochester children are closely watched. Careful records are made of their likes and dislikes, their abilities and disabilities. It is not a question of regimental averages, but of the particular record and need of each individual child. Then, at the beginning of the eighth grade, each youngster is given a chance to take up the courses that will suit him best.

In making this selection the home-room teacher recommends what, in her estimation, is the proper course. The vocational-work teacher makes his recommendation. The lad's parents fill out a long form, giving their ideas of what their own flesh and blood can do best, and what they plan for the future.

Finally, the boy himself has a chance to state his preference, and go on record with a lot of other things besides: what books or magazines he likes to read—what studies he liked best—which have been the hardest —and so on. From all these a decision is made as to where the boy will fit in best. In unusual cases the psychology department is called in as well to give whatever additional light may be shed on the subject. And even after a choice has thus carefully been made, changes are provided for if it develops later that something else might be better.

Last year some twenty-eight hundred children—one out of every twenty—came in for individual psychological tests and observation, in the conscientious effort that Rochester schools are making to see that each child in the whole system gets the thing that best suits his particular need.

The Young Boss Printer

One of the lads who through his careful recording and analyzing was shifted to a prevocational school of sub-normal boys, unable to finish his grades, learned printing, and is today, three years after leaving school, foreman in an important concern, with fourteen men under him. Even though he was far below average mentally, the Rochester school system was able to shift him around until it found a niche where he could "find himself"—where he could do the work he liked and was best fitted for, and succeed.

"When we put in the first junior high," said Weet, "it took the overflow from several overcrowded grammar schools of the old eighth-grade variety." He pointed them out to me on a city map, and then indicated the central junior high that had made the erection of additional grammar schools unnecessary. "It not only took care of

the overflow--it could do what the other schools could not do. It gave us a chance for vocational selection, and all the rest. We have in the junior a school where we can meet new problems in the most economic way.'

There are two types of modern high school: the academic and the technical or vocational. Between and below them stands the junior high, determining in which direction each scholar can best develop—giving each his chance.

THE VALUE OF AN AUDITORIUM

Flora Davenport

Isn't it true that modern conveniences, modern advantages are but lightly appreciated until by chance we are deprived of their use?

This was brought forcibly to our notice last semester when, through building expansion, no auditorium was available for school use.

After a distressing experience through more than five months, it was interesting to learn that the lack of place to assemble was felt in every department of the school.

Since we have been having an opportunity to convene in a splendidly equipped auditorium,—the stage of which is used as the boys' gymnasium,—these opinions as to its value have been expressed by members of our faculty:

From the language department comes the following:

"Assemblies are of particular value to the Latin department because they provide a time and place for the presentation of historical Latin plays. These plays are both interesting and valuable to the pupils, whether they are studying Latin or not, and thus arouse an interest in the work of this department.

The social science teacher: "An auditorium is of value to the Social Science department in so far as it is a medium for presenting things which explain or enhance the class room work. The greatest good, however, comes to the Economic department in that it is the school center embracing the socializing influence of groups as well as individuals."

As to the value of an auditorium to the music department, the instructor feels that "First, it fosters school spirit."

a. Community singing
   1. School songs
   2. School Yells
   3. Competitive group or class singing
   4. Singing for pure enjoyment

"Second, it increases interest in Glee Clubs and Orchestra."

a. Appreciation of schoolmates.
b. Competition seems keener when the size of the enrollment is evident to the pupil.
c. Opportunities for performing before a large audience.

"Third, it fosters Satisfaction and Happiness in the School.

a. Relieves monotony of recitations only, by a program or something different.
b. Opportunity for hearing good

music from the outside world.

c. Increased appreciation for all forms of music and musical activities."

The Vocational advisor feels that "Our auditorium helps the Vocational Department by furnishing a place where speakers, such as ministers, successful business men and visiting men and women of note may address the entire student body. Demonstrations such as the one given by the Telephone Co. and movies based on travel and industry are helpful to the Vocational and Geography teachers as a means of arousing interest in Sioux City projects and also the world outside."

In the Science department, the teacher in charge states that "it may be of value for the purpose of studying acoustic properties of the auditorium. In the study of architecture, lighting system and the science of seating, it is of great service."

From the physical training department we have this note of appreciation: "We use the large stage for a gymnasium and find it to be a very satisfactory plan. It is possible to seat the whole student body for any game. This is a good plan, as seating room in the gymnasium is expensive to build and is not used except for contests. The auditorium is a wonerful place to give health playlets, first aid exhibitions, drills and dances. The patrons have a chance to see physical education thru our stunts, dances and games. We have used the auditorium in our boy's club work which is based on health. We try to get some good speaker each time or an athletic program. The whole student body of boys belong to our club and it would be impossible for all of them to come to club if it were not for our auditorium."

We have, too, the East Junior High School Girls' Friendship Club which meets in the auditorium with helpful talks, literary or other programs, to which, occasionally, parents are invited. We are frequently told by parents that the auditorium is of inestimable value in that it affords an opportunity to them to see the type of work presented to and by the pupils; that it adds a dignity and worth to the presentation; that it permits the association of parents with common cause. Absolutely no criticisms or objections have reached us from parents.

From the administration standpoint there is an especial value in an auditorium in bringing together our twenty-seven groups in a united whole; in affording a place for study, rest or amusement, during lunch hour; in permitting us to present personally the numerous school interests such as thrift, essay contests, the awarding of prizes, school paper; in explaining and stressing necessary school regulations; in pep assemblies for the establishment and maintenance of that school spirit and morale so essential to school welfare.

EDITORIAL COMMENT

In number I of Volume II, Junior High School Clearing House, the statement was made that the Clearing House was to be an "eight-number" service. This number constitutes the eighth of the series. With this eighth number the responsibilities of the present Advisory Board cease.

The members of the Board have enjoyed the work of the year, and hope that their efforts have met, to some extent at least, the approval of people interested in junior high school work. They have endeavored to present as many phases of junior high work as possible. Contributions from authorities have been many.

The members of the Advisory Board, all of whom reside in, and are engaged in school work in Sioux City, have decided that they will not publish the Clearing House during the next school year. They are now in communication with parties who are much interested in taking over the publication of this magazine for next year.

The Board advise the present subscribers of the Clearing House to watch for further announcements concerning the publication of Volume III. Such announcements should appear during the coming summer months.

The Editors and Publisher of Volume II wish to express their appreciation to all persons who have contributed to the Clearing House either articles or suggestions for the betterment of the magazine. Such suggestions as are now at hand will be passed on to the successors of the present officers.

Adieu to patrons of Volume II. Good luck to Volume III and its personnel.

—L. W. F.

OUR CONTRIBUTORS

WALTER W. HART—Professor of Mathematics, University of Wisconsin. Mr. Hart is the well known authority on senior and junior high school mathematics. He has just completed a three volume course in mathematics for the junior high school.

H. L. HARRINGTON—Supervising Principal, Intermediate Schools and Principal, Jefferson Intermediate School, Detroit, Michigan.

(Miss) HELEN S. WATSON—Assistant Superintendent of Schools, in charge of Junior High Schools, Los Angeles, California.

ARNOLD M. CHRISTENSEN—Principal, Junior High School, Winona State Teachers' College, Winona, Minn.

N. C. HEIRONIMUS—Principal, David Worth Dennis Junior High School, Richmond, Indiana.

R. L. HAMILTON—Assistant Superintendent of Schools, Sioux City, Iowa.

JOHN AMID—Journalist, Collier's Weekly

(Mrs.) FLORA DAVENPORT—Dean of Girls, East Junior High School, Sioux City, Iowa.

E. R. WHITNEY—Superintendent of Schools, Schenectady, New York.

NEWS AND NOTES

Mr. S. O. Rorem, Associate Editor of the Clearing House and principal of the North Junior High School, Sioux City, has been granted a leave of absence for one year by the Sioux City Board of Education. Mr. Rorem will study at the University of Chicago.

Mr. F. S. Eakeley, formerly a junior high school principal at San Antonio, Texas, has recently been promoted to a senior high school principalship. Mr. Eakeley was a contributor to the Clearing House and states that he is still intensely interested in junior hight school work, especially extra-curricular activities.

Prof. Phillip W. L. Cox, School of Education, New York University, has noted exceptional work along certain lines in the following junior high schools: Holmes Junior High, Philadelphia, assemblies; Bayonne Junior High Bayonne, New Jersey, guidance and prevocational work; Treat Junior High, Newark, New Jersey, economical administration; Cleveland Junior High Newark, New Jersey, applied art; Junior High School, Number I, Trenton, New Jersey, Industrial arts; Lincoln Junior High, Trenton, New Jersey, building.

West Hartford, Conn., junior highs next year will begin Introductory Courses in Foreign Languages.

Mr. E. L. Carlyon, Whiting, Indiana is studying technique of dealing with average pupils.

Mr. H. H. Fuson, Covington, Kentucky, during the past year has made a study (University report) of the relation of conduct to school work.

The Detroit Junior High School, Cleveland, has tried out an experiment looking toward a possible answer to the question: Do X and Z pupils gain in accomplishment in a geometrical or arithmetical relation?

The West Junior High School, Cleveland, has done during the past year experimental work with a high I. Q. class (7 A Grade).

A Good Citizen's League was organized in the Roosevelt Junior High School, Fargo, North Dakota, by Principal T. W. Blair.

Mr. L. A. Wiliams, Berkeley, California, is making an extensive statistical study of a selected group of pupils in the four junior high schools of Berkeley to try and discover if there is such a thing as "a junior high school population."

Principal D. J. Heathcote, Washington Junior High School, Kalamazoo, Michigan, has organized three Mothers' Clubs for parents of children in the seventh, the eighth and the ninth grades. Each club meets monthly.

Mr. M. H. White, formerly an elementary school principal, has ben elected as principal of North Junior High School, Sioux City, Iowa.

Mr. H. F. Vallance, principal Indianola Junior High School, Columbus, Ohio, during the past year conducted a "testing program" without "intelligence ratings" and achieved excellent results. We await with interest a full report of Mr. Vallance's work.

The Clearing House received an excellent outline of the Latin Course of Study for the senior and junior high schools of Baltimore. The committee on the course of study in Latin is composed of representatives of each senior and junior high school.

STATE REPORTS ON JUNIOR HIGH SCHOOLS

S. O. Rorem

Evidence of great activity in the establishment and improvement of the junior high schools in various states of the Union has been received from the State Superintendents of Public Instruction. The fact that some states do not appear in the list below is not at all important in the purpose of this review,because if the forty five states had all responded the length of the review would have barred it at the beginning.

In the review made in May 1920 the following states gave some information concerning their junior high schools for the Junior High Clearing House: California, Oklahoma, Massachusetts, Nevada, New Jersey, North Carolina, Ohio, Virginia, Iowa. The absence of some of these in this report may be due to the same reason that none except those reported last time. Special mention is deserved by the departments from Washington, D.-C., Pennsylvania, Maryland, Massachusetts, W. Va., California, and Alabama, for the type of material they keep ready to send out to the mimeographed inquiries. Whether others keep at hand little such material for distribution, or do not have it at all, is not important when such a wealth of specific facts, figures and detailed organiation come in response to our one request. Out of the several thousand pages of bulletins and reports at hand only a few high lights can be selected; information concerning course of study, some statistics, some general conclusions, some organization details, with no attempt to make a parallel comparison of these state departments. They will follow in alphabetical order.

ALABAMA has a sixteen page bulletin devoted exclusively to the program of studies and standards for organization of junior high schools. In addition to the provisions for large unit school systems another paragraph recommends the establishment of junior high schools in the county high schools.

The Junior High School.—County high schools are urged to introduce the Junior High School organization wherever building space and equipment are available to accomodate the additional grades. This reorganization gives our county high schools an opportunity to increase substantially their service to the counties and offers a chance for them to do significant work in promoting the plan for re-organization for which the new School code provides. Of course no county high school shall introduce the Junior High

School organization until details pertaining to the program of studies, teaching force, equipment, building, etc. have been definitely and formally approved by the State Department of Education.

An especially welcome feature is the suggested course of study for the small junior high school with only three teachers:

SUGGESTED COURSE FOR JUNIOR HIGH SCHOOL WITH THREE TEACHERS

	Grade 7 Semester I	Grade 7 Semester II	Grade 8	Grade 9
CONSTANTS:				
English	5	5	5	5
Social Studies	5	5	5	5
Mathematics	5	5	4	....
General Science	3	3	3	....
Physical Education and Hygiene	4	4	4	4
Practical Arts	2	....	....	....
Study of Occupations	5	....	....	....
ELECTIVES:				
Occupational Studies for Boys	....	10	10	10
Occupational Studies for Girls	....	10	10	10
Foreign Language	....	5	5	5
Mathematics	....	....	....	5
Art Studies	1	1	1	1
Music	1	1	1	1
Each pupil to carry per week	29–31	28–34	28–34	25–30

"When it is possible to employ one or more additional teachers this course can be enriched by adding general courses in Home Economics, Industrial and Manual Arts, Commercial Subjects; and Mechanical Drawing, Art and Design, Music, Study of Nations."

CALIFORNIA—"The Junior High School is coming to be accepted as the solution of the problem of making the work of the seventh and eighth grades more vital and worth while. It also helps to solve the problem of articulating the work of the elementary and high schools. The movement to establish junior high schools in California was started in 1908 and has been gaining ground steadily. In 1915, a law recognizing the intermediate school course and providing for the establishment of such course was passed. In

1921, a new law changed the name of the intermediate course to junior high school, which it defined to be an organization of the seventh, eighth and ninth grades or of the seventh, eighth, ninth and tenth grades.'

WILL C. WOOD
Supt. of Public Instruction

The term "junior high school" is defined in California as a school embracing the seventh, eighth and ninth grades, or the seventh, eighth, ninth and tenth grades, organized under the high school board in accordance with the provisions of law.

"The course of study for each high school shall be prepared under the direction of the high school board having control thereof, and shall be subject to the approval of the state board of education. * * *; the course for junior high schools (shall be designed) to fit the needs of pupils of the seventh, eighth, ninth and tenth grades; * * *."

The organization of the junior high school need not result in the dismissal of the elementary school teachers now teaching in the seventh and eighth grades. As a matter of fact they are as a rule the best teachers that can be found for these grades, whethed under the elementary or junior high school organization.

The holder of an elementary school certificate or life diploma may teach in the first two years of any junior high school. However, if the holder of a regular elementary school certificate wishes to teach in the third year of the junior high school, she must obtain a junior high school certificate. Regulations governing the issuance of the junior high school credential mny be obtained upon application to the State Board of Education. The holder of a special elementary credential in music, drawing, manual training, home economics, etc., may teach the subjects named in her certificate in the seventh, eighth and ninth years of the junior high school without the general junior high school certificate. The holder of a regular high school certificate may teach any subject in any year of the junior high school. The holder of a special high school certificate may teach the subject named in her certificate in any year of the junior high school without the general junior high school certificate.

In the future the general high school credential and general junior high school credential will name the subjects in which the holder has made special preparation for teaching. This does not imply that the credential is limited to the subjects named but is merely for the purpose of notifying supervisory officers of the specialties of the holder of the credential.

The special bulletin of the Bureau of Education, No. 4, 1923 prepared under the direction of H. B. Wilson of Berkeley, California is worth a great deal to anyone concerned with the administration of junior high schools.

FLORIDA,—In answer to your recent inquiry for material regarding junior high schools, I regret to say that we have on hand no printed or mimeographed material that would be of interest you you.

R. M. Sealey
State High School Inspector

ILLINOIS,—I regret that we do not

have any printed matter on the Junior High Schools.

F. G. Blair
Superintendent

INDIANA,—As a tentative classification for the purpose of applying the junior high school law, the following types of organization are recognized:

Junior High School Proper. A junior high school, in this sense, is a school in which grades seven, eight, and nine, eight and nine, or eight, nine and ten are organized as a distinct school of secondary or intermediate grade, having some degreee of segregation in a building or portion of a building, and having a program of work and a procedure especially adapted to the early adolescent stage of child development.

This type is recommended in the case of larger systems where building conditions are favorable to segregation.

Six-Year High School. A six-year high school is a school in which the upper six years are organized as a distinct unit of secondary grade, having some segregation from the low six grades, and having a program and procedure differentiated for and adapted to both junior and senior groups of pupils.

This type is especially suited to smaller schools in which separate organizations may not be feasible or desirable.

In a school with Junior High School rating, not in connection with a senior high school,—

The principal shall be a graduate from a four year's course in a standard college, standard normal school or the equivalent.

All teachers shall have completed at least two year's training in a standard college, standard normal school, or equivalent, and shall hold a junior or senior high school license in the subjects they teach.

In a six-year High School,—

The principal and in addition thereto at least one teacher, shall be a graduate from a standard four years' course in a standard college, or a standard three years' course in a standard normal school, or the equivalent.

All other teachers shall have completed at least two years' training in a standard college or standard normal school, or the equivalent.

Graduation from schools in which a junior high school organization exists shall be permissible only on fulfillment of the requirements of both the junior and the senior high schools.

As the purpose of the junior high school is essentially the enrichment and diversification of the courses, and not the shortening of the period of school training, the subjects of secondary grade taken in grades 7and 8 shall not be counted toward the fifteen or sixteen units required for graduation; except that pupils of superior ability in these grades may be allowed to elect and count subjects in the grade above, or may be organized into special classes for purposes of acceleration.

KANSAS,—The state educational directory contains an incomplete list of junior high schools in the state of Kansas showing that there are seventy-four within the state. Cities of the first class having more than one are Wichita (5), Topeka (4), Kansas City (4), Hutchinson (2). Others are Atchison, Coffeyville, Fort Scott, Parsons Pittsburgh, Salina. Forty-three schools are established in cities of the second

class and ten in cities of the third class.

MISSOURI,—Replying to your communication relative to the junior high school situation in this state, I wish to say that the State Department of Education has not had, up to this time, any definitely formulated policies concerning these schools. A number of junior high schools, or near junior high schools have been started in this state. We are beginning at this time to formulate a definite program for the development of these schools. We have a committee on organization and standards and a committee on course of study at work at this time. They have employed Dr. Thomas H. Briggs, Teachers College, as their professional advisor and we hope in the near future to have something worth while in this field. We shall be very glad indeed to receive any and all of the worth while information which you have on this subject.

Chas. A. Lee, State Supt.

MONTANA,—Replying to your inquiry of recent date, we have no printed or mimeographed materials on the junior high schools in Montana. We have a number of schools working in the direction of the junior high school but financial conditions have caused a little delay in the complete development of these institutions as true junior high schools.

May Trumper, State Supt.

MARYLAND,—The State Department bulletin of July 31, 123, apparently does not recognize the junior high school as a state unit, but their close co-operation with the Baltimore schools brought out a number of useful and interesting tabulations concerning the Age-Grade status of junior high school pupils of Baltimore, and a two page curricula standard for their junior highs. The summary of the tabulations is given below:

Grade-Age and Grade-Time Tables indicate a condition only slightly less near the ideal than in the senior high schools, insofar as acceleration and retardation is considered. On the basis of the time spent in junior high schools only, the effect of the rapidly moving classes is very evident—acceleration 10.8 percent, normal 84.2 percent; retardation 4.9 percent. In the matter of promotions an improvement similar to that noted in the senior high schools may also be found. It is interesting to note that in these schools also the girls are the more successful. Since both boys and girls work together here it seems to indicate that the girls are better students than the boys, or that they have more ability, or that the curriculum is better adapted to them, or that they attend more regularly, or that the instruction is more suited to their needs more regularly, or that the instruction is more suited to their needs.

There is such a great difference between the promotions in the ninth grade in the junior and senior high schools that it becomes necessary to bring it to your attention. In the senior high schools 77.4 percent boys, 89 percent girls, 81.3 percent total gained promotion at the end of the ninth grade. In the junior high schools 92.8 percent boys, 94.6 percent girls, 93.4 percent total are the corresponding figures. This is another problem which needs careful attention.

PENNSYLVANIA,—One hundred twenty-eight junior high schools are organized on the standard plan of three years, 7-8-9, and seventy more are actively using the 6-2-4 plan for grades seven and eight. Of the former list one hundred thirteen had been inspected and classified by James M. Glass, Director of Junior High Schools, State Department of Education. Although the temptation is great to publish the complete roll of junior high schools of Pennsylvania as a certified list of schools from one state, the space will not permit. It will probably be of interest to know which cities have more than one junior high school. Pittsburgh, (5); Reading (3); Coatesville (3); Erie (5); Johnstown (2); Harrisburg (2); Chester (2); New Castle (2); Easton (2); Philadelphia (7).

MASSACHUSETTS,—This state has a sixty page bulletin concerning junior high schools, dealing with them in a specific manner helpful to anyone interested in administering or knowing the work that is being done. The manual is the result of a conference held at Bridgewater in the Spring of 1920, among the committee members working with Clarence D. Kingsley, State Supervisor of Secondary Education.

Massachusetts reports 121 junior high schools in 1922-23. The cities having more than one school are as follows: Boston (16), Brockton (7), Chelsea (3), Fall River (3), Holyoke (5), Lowell (3), Lynn (4), Medford (4), Somerville (4), Springfield (6), Farmingham (2), Walpole (2), Watertown (2).

NEVADA,—The only junior high schools in Nevada are the following: Reno, Superintendent B. D. Billinghurst; Sparks, Superintendent C. L. Neely; Educational District No. 1, A. L. Kelly, Overton. There may be some junior high school work at McGill, Guy V. Towsley.

W. J. Hunting
State Superintendent

NEW JERSEY,—The State Department of Public Instruction has not published any courses of study for junior school work. The following are approved junior high schools in the state of New Jersey: Moorestown, Montclair, Princeton, Trenton, New Brunswick, South Amboy, Red Bank, North Plainfield.

The Boards of education of the several junior centers have published courses of study which have been approved by the State Departmetn. I am sure you can obtain this material by writing to the districts above named.

There are schools giving junior high school work other than those listed as approved schools in which you will, doubtless, be interested. I would, accordingly, suggest the following: Camden, Newark, Nutley, Bridgeton, Summit.

L. L. Jackson
Asst. Commissioner of Education

RHODE ISLAND,—There are no junior high schools in Rhode Island.

Walter Ranger
Commissioner of Education

VERMONT,—A junior high school is by state law a four year high school, grades 7-10 inclusive. A junior high school, grades 7 to 8 or grades 7 to 9 inclusive is so recognized by a special vote of the State Board of Education but not by state law. A senior high

school, sometimes called a senior-junior high school, is by state law a six-year high school, grades seven to twelve inclusive.

The high schools bulletin announces that a subsequent manual will be published on the junior high school exclusively.

WASHINGTON, D. C.,—Probably the most valuable contribution sent in response to the plea for information was the provisional course outlines from Washington, D. C. on General Science, Geography, Domestic Art, Commercial Branches, Physical Training, History, Mathematics, Penmanship, Spanish, Printing, Drawing, Latin, French, Engish, and Plan of Organization.

"In 1919 two junior high schools were organized in Washington, the Columbia Junior High School for while pupils and the Shaw Junior High School for the colored pupils. These schools increased greatly in size and prestige during the four subsequent years. The Board of education has adopted the policy of extending the junior high-school system. Two new buildings, the Macfarland and the Langley, were in process of erection in 1922-23; an elementary school building, the Randall, is to be converted for junior high school purposes in September, 1923. The old Eastern High School building will likewise be used for junior high-school purposes in September, 1923. Other new buildings and other conversions are contemplated.

The opening of four additional junior high schools at the beginning of the school year 1923-24 required systematic preparation for them on the part of school officials. Teachers must become eligible and be qualified. Courses of study must be prepared. The organization of the school system on the 6-3-3 plan in the vicinity of these proposed junior high schools became a necessity. Preparation for the opening of these four junior high schools has been going on for more than a year.

Appropriate courses of study in the junior high school are undoubtedly second in importance only to the corps of teachers. Indeed, one of the primary purposes in the establishment of junior high schools has been to provide an opportunity for a thorough going alteration, revision, elimination, and extension of the courses of study usually found in grades 7 and 8 of the elementary school as well as those in the first year of the high school.

The courses of study for the junior high school system now being organized in the Washington Schools have originated with the teachers who are to use them. During the school year committees on courses of study were formed for the different subjects of study to be taught in the junior high schools. Each committee was made up of teachers already in the junior high school and those within the school system who had qualified for appointment to those schools. In addition to teachers there were assigned to the committees the heads of the departments in the high schools, who supervise the subject in the junior high school. The course of study which had been in use in the two junior high schools already established was placed in the hands of each committee. The attention of the committees was also directed toward

courses of study in other cities and such books as Charters' Curriculum-Making. Each committee was given full authority to map out a course of study consistent with the purpose of teaching the subject and with the general organization of the junior high school.

When each committee had completed its work, the course of study was referred to a general committee made up of administrative officers.

This committee of administrative officers reviewed the work of each committee and recommended the course of study to the superintendent for final approval.

Such utilization of the knowledge, ability, and experience of teachers has the advantage of building up a practical course of study based on classroom experience, of securing the sympathetic understanding by the teachers of the course when adopted, and of affording helpful stimulus and proper encouragement to the teaching staff which must follow from such professional recognition."

WEST VIRGINIA,—Section eighty-five of the school law authorizes boards of education to establish intermediate schools, or junior high schools, and makes it the duty of the State Board of Education to prescribe courses of study and regulations for such schools.

In compliance with the above requirement of law, the State Board of Education has announced the following requirements for junior high schools.

DEFINITION—A junior high school shall be understood to include the seventh, eighth and ninth (formerly first-year high school) grades organized as a distinct school unit.

TEACHERS—Number of—At least two teachers shall be employed who give their full time to the teaching of junior high school subjects.

TEACHERS — Qualification — All teachers employed in junior high schools shall, as a minimum qualification, be graduates of standard normal schools, or shall have completed normal school or college work that is the full equivalent of such graduation.

LENGTH OF TERM-- The minimum term in approved junior high schools shall be thirty-six weeks.

CLASS PERIODS— The minumum class period ni approved junior high schools shall be forty-five minutes.

LIBRARIES — All approved junior high schools shall have libraries containing at least 250 well selected volumes and shall have adequate and suitable cases for their protection and classification.

LABORATORY EQUIPMENT —All approved junior high schools shall have furniture, apparatus and supplies sufficient for the teaching of general science or industrial subjects for which credit is asked.

WYOMING,—The Educational Directory of the State of Wyoming shows that there are junior high schools in the following cities. Big Horn, Cheyenne, Chugwater, Deaver, Diamondville, Gebo, Hudson, Kemmerer, Lander, Laramie, Manderson, Meeteetse, Newcastle, Rock Springs, Shoshoni, Yoder.

WHAT THE INTERMEDIATE SCHOOLS ARE ACCOMPLISHING IN SCHENECTADY, N. Y.

Supt. E. R. Whitney

Nearly a year has elapsed since the inauguration of the intermediate or junior high school system in Schenectady. The change from the 8-4 plan (eight years elementary-four years high school) to the 6-3-3 plan (six years elementary-three years intermediate-three years high school) is not an easy transition to make. It has necessitated a decapitation of the seventh and eighth grades and splitting up of the high school organization, relieving it of its freshman class, with all the dangers possible and incident thereto. The tremendous increase in the numbers enrolled for secondary education has been a potent contributing factor in necessitating the change.

The whole system has, as a result, been reorganized, bringing about the formation of new boundary lines for six new intermediate school districts, a shifting of teachers into new faculties, a transferring of equipment, books and supplies from one school to another and a readjustment of seats to fit pupils of different size, and a general shake-up in the school organization. It is most gratifying to report that all of these things have been done with the least possible friction.

The question naturally now arises—what are the results? What has been accomplished or is now being accomplished by the inauguration of the intermediate schools? Have the objects for which the change was made been attained?

Before considering the answers to these questions, let us fully understand at the outset that the period of operation has been very short. A partial segregation without change of curriculum began in the McKinley School two years ago. Only since September 1923 was the full and uniform segregation of the 7th, 8th and 9th grades in the six centers known as intermediate schools attained, and the new course of study was then put into operation in the 7th grade only, the wise plan being to let it grow into and through the school as the pupils advanced with the grade. No pupil lost grade or was demoted by the changes. While the additional use of the new curriculum is being slowly made, other features characteristic of this approved form of education were put into operation at once.

The school day is lengthened to six hours—the longest in the system—with six sixty-minute periods. This has been done without protest from either parents, pupils or teachers, because increased interest in school affairs has more than offset any opposition to the change. Supervised study has replaced the old plan of "take this lesson, get it the best way you can." Pupils are now being taught how to study and to study independently.

Not only has the period of operation been short, but school progress has been hampered by long-delayed building construction—a most exasperating

distraction to real classroom progress. Frequently instruction has been interrupted by workmen coming into the class room, by pounding, sawing, and other noises of a most annoying and nerve wracking nature, not to speak of the danger encountered in two schools from falling plaster. Delays in the receipt of supplies, books and equipment earlier in the term were added hindrances. Notwithstanding these and other handicaps, the intermediate school organization is a success. The beneficial results greatly overbalance the obstacles overcome.

Principals and teachers of our city who have had experience in both the 8-0 plan and the 6-3-3 plan *are quite enthusiastic over the advantages of the* 6-3-3 *plan and would not willingly return to the older scheme.* Among the accomplishments thus far are these:

1. *The pupils now have real joy in doing school work.* "The pupils come to school with happy faces; there are fewer cases of truancy; a real school spirit has sprung up"—so states a principal of a large intermediate school with long experience with elementary schools on the 8-4 plan. He continues *"I believe the system of intermediate schools in Schenectady would be justified for this reason alone, other factors being equal."* Happiness comes to the adolescents not simply because of segregation with pupils of their own age and characteristics but because so many new ways of expressing themselves are afforded them, such as the extra curricular activities of debating, orchestra, band, home-making interests, art clubs, and in many schools (would that I could say all schools) gymnasium, and also auditorium, with its opportunities afforded for speaking in public and hearing prominent citizens speak. Every boy and girl in the intermediate school has a chance for discovery, recognition and possible unfolding of latent talent. In the old humdrum school too often it lay mummified throughout the course. With a happy pupil, eagerness for learning and industry in attaining it are rendered easier. Most pupils of the adolescent age yearn for self-expression and recognition. This type of school gives them opportunity for both.

2. *Better teaching has resulted from the introduction of the intermediate school.* As a requirement for teaching in it, special courses requiring further study in summer and extension courses have been taken. Professional advancement has required much study in order to understand and solve the problems arising out of this new type of school. A principal says "The effect of this is clearly shown in improved class room teaching." Another testifies that "The problems of dealing with the adolescent pupil are being solved by the teachers; this is in part due to the special course which was given by Professor Van Den Burg last winter, the influence of which has broadened and strengthened the teachers, so that there is a greater unity of purpose and a new spirit of cooperation distinctly pleasing." Another says "The spirit of cooperation is growing. I feel that I have the cooperation of my faculty and that working through them we are getting a greater degree of cooperation from the pupils."

Because of a larger enrollment per

grade in any one unit, departmental teaching can be more highly specialized. Under the old plan, a teacher had to teach three or more subjects, while now a teacher can concentrate on one or two subjects, and do much better teaching in them. Besides, the larger numbers in each grade enable us to divide into groups according to ability. This is an advantage to both pupils and teachers.

3. *Overlording by older pupils is now very rare.* The "bully" as such, is disappearing. "The pupils all play and visit together in a happy way on the school grounds. We have had just one fight on the playground this year. Heretofore a fight occurred very, very often because the "bully" set the younger pupils up to fight." A new spirit of comradeship is springing up.

4. *Discipline is easier and better.* Pupils are made more self-respecting, more self-reliant and more self-governing. They are realizing that the teachers are their friends and companions though superiors and do not regard them as persons simply "hired" to do police duty. "There seems to be an increasing respect of the entire pupil body for any and all in authority." "There is more freedom, hence more responsibility thrust upon the pupils who seem to do and *because it is right so to do.* Our discipline problem is by far smaller and easier now than last September."

Pupil government is not in vogue but pupil participation in government is employed to good advantage. School management with the teachers is also more flexible. Teachers have gained breadth of view by the new organization. The welfare of the school as a whole now takes the place of much former narrownes. As one puts it "The idea of ownership of a class is being lost sight of in the newer idea of the school unit." So general is this cooperative spirit among teachers and principals of the intermediate schools that wherever an exception occurs it stands out with such unusual eminence as to cause comment.

5. *Better scholarship.* With better teaching and a more responsive attitude on the part of the learners there naturally results a better scholarship from a broader vision of both teachers and pupils.

6. *Pupils stay in school at least one year longer,* especially in the ninth grade, where the mortality formerly was the greatest. Now it is the smallest of the group. One principal rightfully boasts that he has not lost from his school a single ninth grade pupil this school year. It is the consensus of opinion that pupils stay in school one year longer and easier than under the old plan, and that the intermediate school is directly responsible for it affording as it does greater convenience in attending nearer home, the continued personal influence of teachers and the added attraction of the hitherto unknown extra curricular activities.

7. *This type of school affords greater opportunity to develop leadership.* A sense of responsibility, obedience to authority, pupil as well as teacher authority, is engendered through traffic directors, class monitors, club work, physical directorship, pupil home room representatives.

8. *Good citizenship is emphasized in*

the most practical way, i. e. by actual practice. They are recognizing the rights of others. They are forming judgments. They choose their leaders and expect them to represent them. They assume responsibilities similar to those assumed by full grown adults. Their behavior is becoming like that of adults. Whenever the school is engaged in a drive of moment demanding cooperation, they show the utmost loyalty in furthering the enterprize. The old motto "All for each and each for all" seems to have become their rule of action. For them the interests of the school are paramount. In some schools these evidences of good citizenship are exhibited in a more marked degree than in others, but they are exhibited in all of the six intermediate schools. In the words of one principal "There is little friction among the pupils. The ninth grade, especially, has been very thoughtful of the seventh. I am much pleased with the evidence of training for citizenship already shown."

9. *Supervised study lessens and often eliminates home study.* The school day and class period have been lengthened, giving time for lesson preparation as well as recitation right in school under the direction of the teacher, who is instantly available for dirceting and suggesting. Many a pupil under the old system has failed because of an indefinite assignment or lack of a guiding word from a skilled teacher during the hour of study. Often in the home study period, the necessary books, apparatus, and comfortable quiet, so much desired for progress in study, are lacking. These are all present in the supervised study plan. This testimony is most interesting: "This year we are quite free from the offence of pupils not bringing in prepared home work. Pupils are taught how to study and to study independently." As a rule, assignments for home work to the whole class are not made, but are made only in special individual cases where a pupil is behind.

10. *More and better training is now given in the practical arts and in the fine arts than heretofore.* This is made possible by the bringing together of small isolated groups of 8B and 8A pupils of several schools under the old plan into a central school . The groups were so small that specially training teachers of art and music could not be secured full time for them as now, and often the pupils lost much time in going to shops for manual training and homemaking in distant schools. The equipment is now much better, more complete, and more suitable, while the cost of instruction for these subjects is no more than under the old plan. A change in organization has brought it about.

11. Others advantages noted—quoted from our inventory.

"Public opinion is quite generally very favorable—a very necessary attribute to the success of such an innovation."

"Parents refer with pride to their children being in the Intermediate School. Not once have I heard parents say they wished their children were taught according to the old plan."

"By means of the social activities and clubs, the moral conditions are much better looked after." A strong and abiding moral teaching based on school

life and incidents is possible without the formality of classroom instruction.

"Pupils of these grades are being introduced to some men teachers." Not that men are better teachers (or worse) than women teachers, but that the masculine mind is different from the feminine mind, and inasmuch as in "real life" the pupil will come in contact with people of each sex, it is important to have the influence of good teachers of both sexes, especially during the growing up years of adolescents.

Relief from the iron clad plan of promotion by grade only is made possible. Promotion by subject takes its place. A pupil progresses just as rapidly as his own endeavors and ability warrant. The bright need not be held black by the slow, or the stupid. "We have several pupils doing work in two grades—8B and 8A; 8A and 9B; 9B and 9A; 9A and 10B. Pupils are also found working in the 7th and 8th grades. This scheme has kept in school pupils who otherwise would have left. *This individual needs are considered and helped.*"

Over and over again the growing spirit of democracy is mentioned. By bringing together larger groups a greater mixture of nationalities is produced, and these per se naturally show to the native born the good points of the foreign born, and vice versa. The lines of social clevage are made less distinct—a most important consideration during the change from childhood into manhood and womanhood. An important contribution is also noted in the fine influence of the retention of the ninth grade upon the pupils of the seventh and eighth, who now have "higher aims and standards because of the fact that a year of high school work is being carried on in the building."

No one claims or can claim that all of the benefits of the Intermediate School have been attained. Much remains to be done in perfecting the organization, in improvement of teaching, in extension of the curriculum, in working out other problems, but the feeling is general among the teaching and supervisory staff that a good beginning, even in the face of many almost insurmountable obstacles, has been made and that success is crowning our efforts, and that the longer we work under this plan, the better we will like it and the more effective it will become.

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